

Draft CVPIA Fiscal Year 2009 Annual Work Plan

December 1, 2008.

Program Title

Comprehensive Assessment and Monitoring Program – CVPIA Section 3406(b)(16).

Responsible Entities

Staff Name	Agency	Role
Doug Threlhoff	USFWS	Lead
John Hannon	USBR	Co-Lead

Program Goals and Objectives for FY 2009

Section 3406(b)(16) of the Central Valley Project Improvement Act (CVPIA) authorizes and directs the Secretary of the Interior (Secretary) to establish, in cooperation with independent entities and the State of California, a comprehensive assessment program to monitor fish and wildlife resources in the Central Valley and assess the biological results and effectiveness of actions implemented pursuant to CVPIA Section 3406(b). The Comprehensive Assessment and Monitoring Program (CAMP) was developed to address this requirement.

Section 3406(b) of the CVPIA directs the Secretary to conduct activities that will result in the restoration of fish and wildlife species and their habitats in the Central Valley. The Anadromous Fish Restoration Program (AFRP) is a program that conducts restoration activities to benefit anadromous fish in the Central Valley pursuant to CVPIA Section 3406(b)(1).

The CAMP focuses on two program objectives that are identified in the 1997 CAMP Implementation Plan:

- CAMP Program Objective #1 assesses overall (cumulative) effectiveness of actions implemented pursuant to CVPIA Section 3406(b) in meeting AFRP production targets. The CAMP accomplishes Program Objective #1 by monitoring natural production of adult anadromous fish in the Central Valley, and comparing these production estimates with production targets developed by the AFRP.
- CAMP Program Objective #2 assesses the relative effectiveness of categories of CVPIA Section 3406(b) actions (e.g., water management modifications, structural modifications, habitat restoration, and fish screens) toward meeting AFRP production targets. The CAMP currently implements Program Objective #2 by monitoring production of juvenile Chinook salmon with the expectation these data can be used to assess relative effectiveness of the four categories of restoration actions.

The programmatic document that currently articulates the CAMP's goals, methods, and objectives is the 1997 CAMP Implementation Plan.

The CAMP's relationship to other entities that share similar goals and objectives varies in intensity, e.g., it is only superficially related to the CALFED program at the present time. The CAMP is heavily dependent, however, on several programs or agencies that collect monitoring data that are summarized by the CAMP, e.g., the California Department of Fish and Game, the AFRP, and the East Bay Municipal Utilities District.

Status of the Program

In 1997, a CAMP Implementation Plan was developed. This document describes how the CAMP will achieve the aforementioned program objectives in the context of nine anadromous fish taxa. These taxa are fall-, late fall-, winter-, and spring-run Chinook salmon, steelhead, striped bass, American shad, white sturgeon, and green sturgeon.

To document the overall (cumulative) effectiveness of restoration actions implemented pursuant to CVPIA Section 3406(b), i.e., CAMP Program Objective #1, the CAMP strives to produce reports on an annual basis that compare the estimated production of anadromous fish with production targets developed by the AFRP. Thus far, the program has produced annual reports that address Program Objective #1 in 1997, 1998, 1999, 2000, and 2007. The 2007 CAMP annual report provides a synthesis and analysis of anadromous fish monitoring data collected between 1992 and 2006. This report suggests the majority of the AFRP production targets have not been met on a regular basis. This trend suggests a substantial increase in habitat restoration efforts will be required to promote measurable increases in Chinook salmon production and thereby achieve the AFRP fish production targets.

Entities within and outside the Department of the Interior have expressed concern it may not be feasible to achieve CAMP Program Objective #2 as it is presently defined. In 2008, the CAMP completed a peer review of this program objective. The three peer reviewers that critiqued this program objective believe the analytical framework in the 1997 CAMP Implementation Plan will not be able to assess the relative effectiveness of the four categories of restoration actions. Reviewers identified several factors that constrain the ability to identify the most successful restoration categories, e.g., the lack of statistically robust monitoring programs designed to address CAMP Program Objective #2. The peer reviewers also provided several suggestions that should provide greater insight into which restoration activities are most beneficial to anadromous fish. Some of these suggestions will be incorporated into the update to the CAMP Implementation Plan mentioned below.

The CAMP is currently conducting a comprehensive assessment to determine the program's future scope, direction, and costs. The results from the assessment will be included in a programmatic document that updates the 1997 CAMP Implementation Plan. This assessment will: (1) review past and ongoing monitoring projects and identify existing data gaps that must be addressed to achieve the CAMP program objectives; (2) quantify the cost for completing

critical monitoring activities that are not occurring but should take place between FY 2009 and 2014; (3) identify the partnerships CAMP should pursue to cooperatively fund projects where a partner may share a common interest; (4) describe methods for assimilating and storing data collected by CVPIA programs; (5) identify strategies for incorporating monitoring data into decision making efforts; and (6) identify mechanisms for providing monitoring information to interested parties.

The CAMP is currently working with entities that collect data summarized in CAMP reports. These efforts are intended to: (1) clarify how data have historically been collected; (2) provide templates for reporting data, analyses, and results to CAMP; and (3) provide more robust data collection techniques that describe the accuracy and precision of data that are collected.

FY 2008 Accomplishments

CAMP staff accomplished several activities in FY 2008. The more notable activities are summarized in Table A.

FY 2009 Tasks, Costs, Schedules and Deliverables

The anticipated tasks, costs, schedules, and deliverables associated with the Comprehensive Assessment and Monitoring Program in FY 2009 are summarized in Table 1 below.

Table A. FY 2008 Accomplishments for the Comprehensive Assessment and Monitoring Program.

ACCOMPLISHMENT	THIS ACCOMPLISHMENT PERTAINS TO:
Developed a draft report analyzing and synthesizing 16 years of monitoring data pertaining to eight anadromous fish taxa in the Central Valley of California. The report also describes how often each taxon's AFRP fish production target was met between 1992 and 2007.	CAMP Program Objective #1
Developed a draft protocol to standardize the process for collecting, analyzing, and reporting rotary screw trap data pertaining to juvenile Chinook salmon.	CAMP Program Objective #2
Completed a cooperative agreement to develop statistical and structural design recommendations for a comprehensive database to document and understand changes in the abundance of juvenile Chinook salmon in the Central Valley.	CAMP Program Objective #2
Worked with California Department of Fish and Game staff to review, and as needed revise, angler survey data collected in the Central Valley between 1994 and 2002. These data are necessary to evaluate some of the assumptions used to calculate production of Chinook salmon in the Central Valley.	CAMP Program Objective #1
Updated a website for distributing CAMP-related data and documents to the public and interested stakeholders.	CAMP Program Objectives #1 and #2
Initiated an effort to collect and synthesize environmental and fish-related data on Clear Creek in northern California. The CAMP is compiling these data as a prelude to attempting to assess the relative effectiveness of different categories of restoration actions in this watershed.	CAMP Program Objective #2
Completed a peer review to evaluate the feasibility of conducting CAMP Program Objective #2, i.e., assess the relative effectiveness of four categories of restoration actions implemented under CVPIA Section 3406(b). The results of the peer review will be incorporated into the CAMP Implementation Plan when it is revised.	CAMP Program Objective #2
Developed an Excel Spreadsheet summarizing monitoring and research activities funded with CVPIA funds in FY 2007.	CAMP Program Objectives #1 and #2
Participated in meetings and engaged in planning exercises relating to the CVPIA, e.g., development of a 10-year Implementation Plan for the CVPIA.	CAMP Program Objectives #1 and #2

Table 1. FY 2009 Tasks, Costs, Schedules, and Deliverables.

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Anticipated Funding Source Restoration Fund	Anticipated Funding Source Water & Related Resources
1.1	Program Management						
1.1.1		1.0	CAMP program manager: FWS. Program management activities in FY 2009 will include: (1) developing an annual report that assessing and reporting overall (cumulative) effectiveness of restoration actions implemented pursuant to CVPIA Section 3406(b); (2) participating in planning exercises relating to the CVPIA, e.g., development of a 10-year CVPIA Implementation Plan; (3) managing contracts and/or cooperative agreements; (4) acquiring, refining, and synthesizing data sets to address CAMP Program Objectives #1 and #2; (5) describing monitoring and research-related activities funded with CVPIA funds in FY 2008; (6) identifying new CVPIA data collection activities that must be completed to ensure program success; and (7) conducting a comprehensive assessment to determine CAMP's future scope, direction, and costs.	9/30/2009	\$200,241	\$200,241	\$0
	<u>Subtotal Costs</u>				\$200,241	\$200,241	\$0
Footnote	The estimated annual cost for a FWS employee with the 22% overhead is \$200,241.00						
1.2	Program Support						
1.2.1		.03	CAMP co-lead managerUSBR. The CAMP co-lead's role typically consists of: (1) providing advice, and (2) reviewing documents written by the FWS CAMP program manager.	9/30/2009	\$5,000	\$5,000	\$0
1.2.2		.5	A FWS employee will be hired for 6 months to help the USFWS program manager with some of the activities listed in section 1.1.1 above.	9/30/2009	\$100,120	\$100,120	\$0
	<u>Subtotal Costs</u>				\$105,120	\$105,120	\$0
1.3	Technical Support	.35					
1.3.1			HIGH PRIORITY: Continue work with the Pacific States Marine Fisheries Commission to develop statistical and structural design recommendations for a comprehensive database to document and understand changes in the abundance of juvenile Chinook salmon.	9/30/2009	\$30,000	\$30,000	\$0
1.3.2			HIGH PRIORITY: Conduct an analysis to assess the robustness of rotary screw trap data that were collected on the	9/30/2009	\$30,000	\$30,000	\$0

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Anticipated Funding Source Restoration Fund	Anticipated Funding Source Water & Related Resources
			Stanislaus River between 1996-2008, and develop tabular summaries of the production of different life stages of juvenile salmon from that river.				
1.3.3			A FWS technician will be hired for 4 months, and begin the process of collecting, reviewing, and standardizing rotary screw trap data that quantify the number of juvenile Chinook salmon that have been caught in the Central Valley. These data will ultimately be entered into a single database that will be used to estimate production of juvenile Chinook salmon. It is anticipated the final database will provide data that can be used to assess how restoration projects have affected the production of juvenile and adult Chinook salmon.	9/30/2009	\$70,121	\$70,121	\$0
1.3.4			Hire a statistician to assist with the analysis of environmental and fish-related data pertaining to Clear Creek, with the goal of analyzing data to assess the relative effectiveness of different categories of restoration actions at that location.		\$21,200	\$21,200	\$0
	<u>Subtotal Costs</u>				\$151,321	\$151,321	\$0
1.3.5			<u>UNFUNDED NEED #1</u> : Hire 1 FWS employee for 6 months i.e., 1/2 FTE costing \$100,120. The employee would develop databases that : (1) describe site-specific monitoring activities associated with Central Valley restoration activities, and (2) collect and synthesize data characterizing restoration projects in the Central Valley. The first database would provide an accounting of CVPIA Section 3406(b) activities, and the second database would be used to assess the effectiveness of restoration activities in the Central Valley.				
1.12	Monitoring						
1.12.1			HIGH PRIORITY : Provide partial funding to operate a rotary screw trap on the Stanislaus River in FY 2010 to monitor production of juvenile Chinook salmon.	9/30/2009	\$43,318	\$43,318	\$0
	<u>Subtotal Costs</u>				\$43,317	\$43,317	\$0
1.12.2			HIGH PRIORITY, UNFUNDED NEED #2 : Quantify production of juvenile Chinook salmon on the Stanislaus River using a rotary screw trap (RST). The work would be done using a contract with the Cramer Fish Sciences consulting company. This unfunded need in FY 2010 is \$115,000. The CAMP will obtain a copy of all the raw data associated with this project. The operation of the Stanislaus River RST is identified as a recommended monitoring element in the CAMP Implementation				

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Anticipated Funding Source Restoration Fund	Anticipated Funding Source Water & Related Resources
			Plan (i.e., CAMP monitoring element # 78), and supports a CAMP and CVPIA-related need to accurately quantify production of juvenile Chinook salmon in a Central Valley Project watershed.				
1.12.3			HIGH PRIORITY, UNFUNDED NEED #3: Fund coded wire tagging of juvenile Chinook salmon at Coleman National Fish Hatchery and Nimbus Fish Hatchery. This is a multi-year project. Hatchery-produced salmon must be marked to quantify natural production of Chinook salmon in the Central Valley. Marking of hatchery fish at these two CVPIA facilities corresponds to CAMP monitoring elements # 3, 7, 36, and 40. The 1-year cost to mark hatchery-reared salmon in FY 2010/2011 is \$744,000. The CAMP would obtain copies of all the raw data associated with this project. The Restoration Fund may not be an appropriate mechanism for funding this high priority activity.				
	<u>Subtotal</u>				\$43,418	\$43,418	\$0
	Total Costs				\$500,000	\$500,000	\$0
	Reclamation				\$5,000	\$5,000	\$0
	Service				\$495,000	\$495,000	\$0
	Potential 15% funding cut		Taken from task 1.3.3 and 1.3.4		\$75,000	\$75,000	\$0
	Unfunded Needs				\$959,120	\$959,120	\$0

Table 2. Budget Breakout

Task	Agency	FTE	LABOR			CONTRACTS		Misc. Costs	Total Costs
			Direct Salary and Benefits Costs	FWS Costs on Salary & Benefits (35%)	FWS Overhead Assess: 22% of Direct Salary and Benefits Costs	Contract, Grant, and Agreement Costs	FWS Overhead Assess: 6% Contract Costs		
1.1 Program Management	USFWS	1.0	106,686	57,446	36,109	0	0	0	200,241
	USBR	0	0	0	0	0	0	0	0
1.2 Program Support	USFWS	0.5	53,343	28,723	18,054	0	0	0	100,120
	USBR	0.03	5,000	0	0	0	0	0	5,000
1.3 Technical Support	USFWS	0.35	37,359	20,117	12,645	76,604	4,596	0	151,321
	USBR	0	0	0	0	0	0	0	0
1.12 Monitoring	USFWS	0	0	0	0	40,866	2,452	0	43,318
	USBR	0	0	0	0	0	0	0	0
USFWS Total Costs		1.85	197,388	106,286	66,808	117,469	7,048	0	495,000
USBR Total Costs		0.03	5,000	0	0	0	0	0	5,000
TOTAL ALL		1.88	202,388	106,286	66,808	117,649	7,048	0	500,000

Table 3. Three-Year Budget Plan FY 2010 – 2012.

Year	Description of Activities	Requested RF Funding	Requested W&RR Funding
2010	In 2010, the CAMP requests funding commensurate with the FY 2009 Presidents Budget (i.e., \$500,000), plus additional funds to address: (1) an inflation rate of 5% on costs related to staff salaries for 2 FTEs (= \$20,024); (2) Unfunded Need #1 above (Hire one temporary FWS employee = \$105,126); (3) Unfunded Need #2 above (operate a rotary screw trap on the Stanislaus River = \$125,000); and (4) fund a portion of Unfunded Need #3 (code wire tag juvenile fish at 2 CVPIA hatcheries = \$100,000) to facilitate an activity that must be completed to meet CAMP Program Objective #1.	\$850,000	\$0
2011	In 2011, the CAMP requests funding commensurate with the budget request in FY 2010, plus funds to cover a 5% inflationary cost.	\$893,000	\$0
2012	In 2012, the CAMP requests funding commensurate with the budget request in FY 2011, plus funds to cover a 5% inflationary cost.	\$937,000	\$0

Note: The FY 2010 – 2012 Budget Plan provides estimates of capability only. The amounts are displayed are those that might be reasonably appropriated each year. These figures do not reflect the future Congressional Appropriations process. All of these estimates will be adjusted annually as RF collections are realized.

**APPENDIX A: DETAILED DESCRIPTIONS OF
PROPOSED CAMP-RELATED MONITORING ACTIVITIES IN FY 2009**

Project Description:	Continue work with the Pacific States Marine Fisheries Commission to develop statistical and structural design recommendations for a comprehensive database to document and understand changes in the abundance of juvenile Chinook salmon.
FY 2009 CAMP annual work plan subtask number:	Subtask number 1.3.1. High Priority
Scope of the monitoring effort:	10-13 watersheds in the Central Valley.
Product/deliverable:	Report providing design recommendations and assessment of the challenges/limitations associated with building a complex database synthesizing data collected with different techniques and runs of Chinook salmon.
Cost:	FY 2008: \$45,341. FY 2009: \$30,000
Questions posed:	How has production of juvenile Chinook salmon in various watersheds responded to implementation of various restoration activities?
Objectives:	Develop a single database capable of consistently calculating robust juvenile Chinook salmon production estimates for 10-13 watersheds.
Results – expected or actual:	The product/deliverable will not result in the development of a database populated with data. Instead, the project will work toward generating analytical formulas and programming code that will be incorporated in the database.
Data collection methods:	A statistician and database programmer will develop the analytical formulas and programming code that will be incorporated in the database.
Data management:	The CAMP will have proprietary ownership of the database when it is built, but the various entities that collect rotary screw trap data in the Central Valley will be encouraged to use the database as they generate future Chinook salmon production estimates.
Assessment:	Juvenile Chinook salmon production estimates will be calculated in a consistent fashion so time series of juvenile salmon production and restoration actions in a given watershed can be compared.
Use of information in future decision making:	The assessment will provide data to determine if restoration actions are creating conditions that lead to increases in the production of juvenile Chinook salmon.

Project Description:	Assess the strengths and limitations of rotary screw trap (RST) data from the Stanislaus River.
FY 2009 CAMP annual work plan subtask number:	Subtask number 1.3.2. High Priority
Scope of the monitoring effort:	Stanislaus River.
Product/deliverable:	Technical assistance/report from a statistician.
Cost:	FY 2009: \$30,000
Questions posed:	How robust are the juvenile Chinook salmon production estimates from the Stanislaus River? How can the precision of future production estimates be improved?
Objectives:	(1) Determine if existing juvenile salmon production estimates from the Stanislaus River are (a) statistically robust, or (b) qualitatively robust. (2) Evaluate data to determine how trap efficiency tests should be refined to produce more robust production estimates.
Results – expected or actual:	The RST data will ultimately be used to evaluate the effectiveness of restoration actions on the Stanislaus River. By evaluating the RST data, the ability to apply RST data and assess the cumulative effects of past restoration actions will be put in a sharper context.
Data collection methods:	Rotary screw trap data historically collected by the Cramer Fish Sciences company will be synthesized – the proposed project does not involve the collection of new data.
Data management:	A final report documenting the results of the project will be available on the CAMP website.
Assessment:	Temporal trends in the annual production of Chinook salmon fry, parr, and smolts from the Stanislaus River between 1996 and 2008 will be assessed to determine if there are statistically significant or qualitative changes in the production of juvenile Chinook salmon.
Use of information in future decision making:	The proposed project will: (1) establish the strengths and limitations of data that will be used to evaluate the success of restoration activities, and (2) produce recommendations that are designed to increase the precision of future production estimates.

Project Description:	Collect, review, and standardize rotary screw trap data quantifying the number of juvenile Chinook salmon caught in the Central Valley.
FY 2009 CAMP annual work plan subtask number:	Subtask number 1.3.3.
Scope of the monitoring effort:	10-13 watersheds in the Central Valley
Product/deliverable:	Standardized, digital files that provide rotary screw trap data from 10-13 watersheds.
Cost:	FY 2009: \$70,121.
Questions posed:	How has the production of juvenile Chinook salmon in various watersheds responded to the implementation of various restoration activities?
Objectives:	Acquire the rotary screw trap data collected by various entities in the Central Valley, reformat the data into files that have a similar database structure, and conduct QA/QC checks to identify and understand discrepancies/flaws in the data.
Results – expected or actual:	The proposed activity will produce digital files that are ready to be imported into a completed database.
Data collection methods:	Raw data will need to be acquired from various agencies/contractors that collect rotary screw trap data. The raw data will need to be re-formatted into 1 database structure, and checked for errors. For each file, metadata will be developed explaining how data were collected, and what the constraints of the data are.
Data management:	The digital files with the raw data will be archived by the CAMP in a Microsoft Excel or Access format.
Assessment:	The activity does not involve an assessment process; it involves a process where data are collected, processed, and checked for errors.
Use of information in future decision making:	The data will ultimately be uploaded into a database that will be used to determine if restoration actions are creating conditions that lead to increases in the production of juvenile Chinook salmon.

Project Description:	Hire a statistician to assist with the analysis of environmental and fish-related data pertaining to Clear Creek.
FY 2009 CAMP annual work plan subtask number:	Subtask number 1.3.4.
Scope of the monitoring effort:	Clear Creek.
Product/deliverable:	Technical support and statistical expertise.
Cost:	\$21,200.
Questions posed:	Of the three categories of restoration activities implemented on Clear Creek, (i.e., water management modifications, structural modifications, and habitat restoration), which categories promoted the greatest increase in adult and juvenile Chinook salmon production?
Objectives:	Analyze environmental and fish-related data to determine if it is possible to assess the relative contribution of three categories of restoration activities.
Results – expected or actual:	Unknown. The quality of monitoring data may or may not be sufficient to determine the relative contributions of restoration categories that have led to increases in juvenile fish production.
Data collection methods:	The CAMP will acquire and synthesize environmental and fish-related data collected other entities. These synthesized data sets will be provided to the statistician for analysis. A final report providing findings related to the objective will be developed by CAMP staff.
Data management:	CAMP staff will retain digital copies of the data used during the proposed project.
Assessment:	The assessment process will rely on time series analyses to infer which restoration categories produced the greatest number of adult and juvenile Chinook salmon.
Use of information in future decision making:	Information from the assessment will have the potential to guide future restoration activities on Clear Creek by identifying the restoration activities that have led to the greatest production of Chinook salmon.

Project Description:	Quantify production of juvenile Chinook salmon from the Stanislaus River. High Priority
FY 2009 CAMP annual work plan subtask number:	Subtask numbers 1.12.1 and 1.12.2.
Scope of the monitoring effort:	Stanislaus River.
Product/deliverable:	Digital database with the raw trap data, and a final report that provides an analysis of the data.
Cost:	The CAMP can provide \$43,317 of FY 2009 funds to do field work in FY 2010. <u>There is an unfunded need of \$115,000 to conduct this project</u> in that year. If the unfunded need is not met, the project is not likely to occur.
Questions posed:	How has the production of juvenile Chinook salmon in the Stanislaus River responded to the implementation of various restoration activities?
Objectives:	Acquire data to estimate the production of juvenile fall-run Chinook salmon on the Stanislaus River.
Results – expected or actual:	The proposed activity will produce digital files with raw data and a final report documenting the results of the monitoring activity.
Data collection methods:	Two or more rotary screw trap will be used to collect juvenile salmonid data between January and June of 2009.
Data management:	Digital files with raw data will be archived by the CAMP in a Microsoft Excel or Access format. A final report documenting the results of the activity will be available on the CAMP website.
Assessment:	A time series of the production of juvenile Chinook salmon in the Stanislaus River will be developed to determine if restoration activities are leading to increases in the production of juvenile salmon.
Use of information in future decision making:	If the assessment does not suggest restoration actions are creating conditions that lead to increases in the production of juvenile salmon, alternative strategies will need to be developed to increase salmon production.

One-page summaries of project descriptions for subtasks 1.3.5 (Hire one temporary FWS employees for 6 months) and 1.12.3 (code wire tag juvenile Chinook salmon at the Coleman National Fish Hatchery and Nimbus Fish Hatchery) will be provided if there is a realistic potential that funding could be available for these projects in FY 2009.